DOCUMENT RESUME

ED 085 964 EC 060 952

AUTHOR	Gampel, Dorothy H.; And Others
TITLE	A Comparison of the Classroom Behaviors of Special Class EMR, Integrated EMR, Low IQ, and Nonretarded Children. Studies in Learning Potential, Volume 3, Number 41.
INSTITUTION	Research Inst. for Educational Problems, Cambridge, Mass.
SPONS AGENCY	Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.; National Inst. of Mental Health (DHEW), Bethesda, Md.
PUB DATE	73
GRANT	OEG-0-8-080506-4597(607)
NOTE	22p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Behavior Patterns; Childhood; *Educable Mentally Handicapped; *Exceptional Child Research; Mentally Handicapped; *Peer Groups; *Regular Class Placement; Special Classes

ABSTRACT

The classroom behaviors of 12 segregated and 14 integrated educable mentally retarded (EMR) children (mean age 10 years) who were all formerly segregated and then randomly assigned to their present class placement were compared to those of a low IQ group who had never been identified for special class placements and an intellectually average group of children on a 12 category observation schedule. The data indicated that four months after the school year began, the integrated EMR behaved more similarly to non-labeled EMR children than to their segregated peers. The results indicated the importance of appropriate peer models on the classroom behaviors of EMR children. (Author)

ED 085964

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STUDIES IN LEARNING POTENTIAL

A COMPARISON OF THE CLASSROOM BEHAVIORS OF SPECIAL CLASS EMR, INTEGRATED EMR, LOW IQ, AND NONRETARDED CHILDREN

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Volume 3, Number 41
1973

Research Institute For Educational Problems
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EC 060 952

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In recent years, considerable emphasis has been given to providing varied ways to educate retarded children in regular classes. This has been so since an accumulation of data has indicated that special classes do not produce more favorable outcomes than regular grades on either academic or social adjustment variables (Kirk, 1964; Gardner, 1966). As a result, many special classes are being abolished and the children placed back in regular grades, most often with some supporting assistance as a resource room, itinerant teachers, etc. The present report comprises a part of a larger investigation designed to test the prediction that it is to the child's benefit to be reintegrated back into regular classes once he has spent two, three, or more years in a special class.

The present study was primarily addressed to examining the effect of re-integration on the classroom behaviors of EMR children who formerly were segregated. Of secondary concern was a comparison of behaviors of the two labeled EMR groups (segregated EMR and re-integrated EMR) with each other and with the behaviors of two unlabeled comparison groups: (1) low IQ children in the same school who had never been identified as special class candiates, and (2) a random sample of average-IQ children in the same school. The low IQ children were included because of the likelihood that low IQ children who have never been placed in special classes

differ from labeled EMR children in their classroom behavior (Kirk, 1964). A primary intention of this study was to identify and compare behaviors along dimensions that have been thought to be related to the behavior of many EMR children, as contrasted to their average IQ peers. The question is whether the children's IQ status or their placement history is more closely associated with their classroom behavior.

There is comparatively little research that has concerned observations of EMR children in the classroom, and even less concerning a comparison between integrated and segregated EMR children. Grosenick (1969) studied the behaviors of EMR children in special and regular classes and found that there was a significant decrease in the former's handraising after integration. This finding was somewhat consistent with that of Gampel, Harrison, and Budoff (1971) who reported that integrated EMR children were more restricted in their verbal behaviors than were segregated children, i.e., the integrated EMR children interacted significantly less often with peers and teachers. Both EMR groups, however, interacted significantly less than the intellectually average children.

Gampel, et al. (1971) also reported that the special class children had significantly higher scores on a factor which included awkward behavior and hostile and aggressive interaction with peers, contrasted with the integrated children who were inhibited in behaviors in general. The study was limited in its generality, however, since there was selection bias in the assignment of children to the segregated class or integrated program and there had been no data available on the children prior to their participation in

the integration program. School administrators had assigned the more successful retarded children to the integrated program, on the assumption that these children would maximize the likelihood of the program succeeding. In the present study in a different school, EMR children were randomly assigned to integrated and segregated class placements. Other data on these same children show that the two EMR groups were comparable in their initial classroom behaviors prior to their assignment to the two groups studied here (Gampel, Gottlieb and Budoff, in preparation). The question is whether changes ensue after differential placement.

Subjects.

Fifty-five children distributed among four study groups were selected as subjects. The four groups included: (1) 12 segregated EMR children enrolled full-time in a special class, (2) 11 EMR children integrated full-time into a regular education program who received additional support beyond what is ordinarily provided in regular classes, (3) 18 low-IQ children who had never been identified for special class placement and who constituted all non-special class children in the school whose IQ's were below 85, and (4) 11 intellectually average children who attended the same classes where the EMR children were integrated. All subjects attended the same school.

The integrated and segregated groups of EMR children had all been enrolled in special classes located in three different schools prior to the onset of this study. However, to examine the effects of reintegration, the children were randomly assigned to either an

integrated or a segregated class placement in a new school building that opened at the time this study began. The total sample of EMR children who participated in the overall experiment was 31, 17 of whom were assigned to an integrated placement and the remainder to the segregated class. However, observation data were available on only 26 of the 31 children. Additional data regarding subject characteristics appear in Table 1.

Procedures

Development of the behavior categories for recording.

Working from models available in Werry and Quay (1969) and Haring, et al., (1969) twelve behavior categories were developed to cover a broad range of attention-type behaviors, deviant behaviors (both of a "peculiar" and aggressive or hostile type) and modes of verbal interaction. The first step was selection of relevant behavior items by observing in the classroom and listing all behaviors as they occurred. After a trial period of two weeks, some of the behaviors initially thought to be of interest were rejected as irrelevant, vague, or too low in frequency, and new categories were inserted. Criteria for inclusion were that the category be explicit, reliable between coders, and of high enough frequency to be a potential differentiator. The two observers who participated in this phase checked their records for discrepancies, and discussed any differences after each trial observation. The 12 behavior categories which comprised the final observation scheme included: (1) attention, (2) distraction, (3) out of seat, (4) restlessness, (5) self-stimulation, (6) uncoordinated motor

response, (7) aggressive behavior to peer, (8) aggressive behavior from peer, (9) positive verbal response to peer, (10) negative verbal response to peer, (11) positive verbal response from peer, and (12) negative verbal response from peer. The criteria for each of the behaviors were written to minimize ambiguity and are available in Gampel, et al. (1971).

Insert Table 1 about here

Method of observing.

A time-sampling method was used, each observation unit involving a five-minute sample broken into ten units of 20 seconds of observation and ten seconds of recording. The category system was not mutually exclusive: all behaviors which occurred during the 20-second observation period were recorded with the one restriction that a given category be tallied only once each period. No behaviors which occurred during a 10-second recording period were tallied. Timing was done with the sweep hand of a watch. Each subject was observed on six different days, at different times each day, for a total of 30 minutes of observation for each subject. All observations were done in the classroom, at one week intervals over a six-week period. The data were recorded only while the children were working at their desks. While recognizing that there are a variety of situations during the school day, we chose to record only while the children were working at their desks in order to observe behavior in a semi-structured situation. No observations were made during group

Table 1

Subject Characteristics for Four Groups of Subjects

		CA (months)	IQ[1]
Segregated EMRs	$\bar{X}$	128.17	70.50
(N = 12)	σ	14.55	9.12
Integrated EMRs	$\bar{X}$	131.07	70.21
(N = 14)	σ	13.06	5.67
Unidentified EMRs	$\bar{X}$	131.00*	77.53**
(N = 18)	σ	14.82	7.69
Controls	$\bar{X}$	119.00	99.44*
(N = 11)	σ	13.98	11.93

* 2 missing

** 3 missing

[1] Non-retarded children's IQ scores are Otis scores, the segregated and integrated and unlabelled students have individual test scores

activities. The children spent the majority of the time working on their own, but the style of the school included freedom to move about to consult with the teacher or with peers.

Training of the two observers took place over a period of two weeks. Reliability coefficients between the two observers for each of the twelve behavior categories across the six observation days were all above .90 and were highly significant. All data were collected during the fourth month of school. It was assumed that at this time the subjects would have become acclimated to their new school placement and that their behaviors would be minimally affected in any unusual manner by their new environment.

Results

Each subject was characterized by 12 scores, one for each of the behavior categories. Each score was computed by averaging across the ratings of the two observers for six observation periods. The means and standard deviations of the 12 behavior categories for the four groups of subjects appear in Table 2.

Insert Table 2 about here

The data for the 12 behavior categories were analyzed in a one-way multivariate analysis of variance (MANOVA) with the 12 scores constituting the dependent measure and the four groups the independent variable. Within the MANOVA the effects of three comparisons (difference contrasts) were calculated: (1) integrated EMR versus segregated EMR; (2) integrated EMR and segregated EMR versus low IQ non-EMR; and (3) integrated EMR, segregated EMR, and low IQ non-EMR versus the average IQ group.

Table 2

Means and Standard Deviations for Four Groups on Twelve Behavior Categories

Group	1[a]	2	3	4	5	6	7	8	9	10	11	12
Segregated EMR												
$\bar{X}$	9.36	.60	2.13	7.59	2.37	.15	.25	.09	4.03	.50	3.30	.57
SD	.65	.62	1.60	1.27	1.20	.33	.31	.18	2.04	.85	1.72	.91
Integrated EMR												
$\bar{X}$	9.05	.96	2.96	6.31	3.08	.04	.10	.04	4.01	.14	3.59	.11
SD	.99	.99	1.96	1.52	1.51	.13	.27	.07	1.56	.24	1.45	.13
Low IQ nonEMR												
$\bar{X}$	9.33	.67	2.16	6.79	3.04	.00	.09	.02	4.26	.03	4.04	.02
SD	.76	.76	1.55	1.51	1.28	.00	.16	.07	1.60	.07	1.59	.06
Average IQ												
$\bar{X}$	9.32	.68	1.83	7.76	2.76	.00	.06	.03	4.75	.06	4.46	.07
SD	.55	.55	1.51	1.21	1.45	.00	.12	.07	1.28	.09	1.47	.11

[a](1) attention, (2) distraction, (3) out of seat, (4) restlessness, (5) self-stimulation, (6) uncoordinated motor response, (7) aggressive behavior to peer, (8) aggressive behavior from peer, (9) positive verbal response to peer, (10) negative verbal response to peer, (11) positive verbal response from peer, (12) negative verbal response from peer.

The results of the MANOVA for the integrated versus segregated EMR contrast indicated a significant effect across the 12 behavior categories (F = 2.115, df = 12/40, p =.038). Further analysis of this finding revealed significant differences between the integrated and segregated EMR groups on three of the 12 behavior categories. Segregated children manifested significantly more restlessness behavior (F = 5.46, df = 1/51, p = .023), more negative verbal responses to peers (F = 4.423, df = 1/51, p = .040), and received more negative verbal responses from peers (F = 6.667, df = 1/51, p =.013).

No significant multivariate F ratios were obtained for the two remaining contrasts (integrated and segregated EMR versus low IQ non-EMR, and integrated EMR, segregated EMR, and low IQ non-EMR versus the average IQ group).

All of the Ss' data were then factor analyzed in order to simplify the conceptualization of the results and to assess the independence of the three findings differentiating segregated from integrated children. Since factor scores are generally more reliable than the individual scale scores on which they are based, it was considered possible that factor analysis might detect group differences which had been undetected in the first analysis because of low scale reliabilities. To this end, each S's 12 mean behavior scores and his 12 associated standard deviations were correlated with those of the other Ss. Even though the two scores (mean and standard deviation) for each behavior category were substantially correlated, it was felt that the SD measure would reflect the situational responsiveness of a behavior category as well as its level. The resulting 24 x 24 correlation matrix was factor analyzed by the principal components method with unity in the diagonals. The

normal varimax criterion was used for axis rotations to simple structure.

Three factors emerged which accounted for 56.1% of the total variance. Considering only factor loadings above .40 as meaningful, the factor loadings clearly satisfy the criteria of simple structure. Factor loadings for the three factors appear in Table 3.

Insert Table 3 about here

Factor I, accounting for 27.7% of the variance, describes an active, hostile, and aggressive child. Included in Factor I were positive loadings of the means and standard deviations for distraction, aggressive behavior to peer, negative verbal response from peer, aggressive behavior from peer, negative verbal response to peer, and a negative loading for attention to task. Factor II, which accounted for 15.6% of the variance, describes a quiet, attentive child with an additional component of variability in positive social interaction. The mean and standard deviation of attention to task had a high positive loading on Factor II, and the mean and standard deviation for distraction had a high negative loading. Factor III, which accounted for 12.4% of the variance, describes an active, social child who is often engaging in positive social interaction and has a low incidence of awkward or peculiar behavior. The behavioral categories subsumed under Factor III were out-of-seat, positive verbal behavior to peer, and positive verbal behavior from peer, all of which had high positive loadings on this Factor.

In order to determine whether there were significant differences in the observed patterns of behavior among the four groups of subjects, each subject's three factor scores were used as

Table 3

Factor Loadings for Behavior Categories

	Variable	Factor I	Factor II	Factor III	Communality
Mean	(1)	-0.084	0.953	-0.067	0.920
Mean	(2)	0.085	-0.948	0.075	0.911
Mean	(3)	-0.006	-0.110	0.568	0.335
Mean	(4)	0.401	-0.037	-0.218	0.218
Mean	(5)	-0.061	-0.134	-0.420	0.198
Mean	(6)	0.311	0.208	-0.488	0.378
Mean	(7)	0.762	-0.208	0.297	0.712
Mean	(8)	0.785	-0.013	-0.001	0.617
Mean	(9)	0.218	0.112	0.749	0.620
Mean	(10)	0.895	-0.141	0.102	0.832
Mean	(11)	0.167	0.113	0.738	0.586
Mean	(12)	0.880	-0.104	0.003	0.786
SD	(1)	0.136	-0.944	0.105	0.920
SD	(2)	0.137	-0.942	0.110	0.919
SD	(3)	0.065	-0.234	0.624	0.448
SD	(4)	-0.411	0.117	0.148	0.205
SD	(5)	-0.070	0.215	-0.111	0.063
SD	(6)	0.307	0.166	-0.546	0.420
SD	(7)	0.602	-0.205	0.389	0.556
SD	(8)	0.740	0.017	-0.024	0.549
SD	(9)	-0.082	0.461	0.306	0.313
SD	(10)	0.911	-0.151	0.165	0.879
SD	(11)	-0.090	0.471	0.318	0.331
SD	(12)	0.859	-0.036	0.034	0.740

dependent variables in a one-way MANOVA in which group assignment was the independent variable. As before, the group factor was partitioned into three difference contrasts: (1) integrated EMR vs. segregated EMR; (2) integrated and segregated EMR vs. low IQ non-EMR; (3) integrated EMR, segregated EMR and low IQ non-EMR vs. the average IQ group.

The results of the integrated vs. segregated EMR contrast revealed a significant multivariate effect ($F = 4.23$, $df = 3/49$, $p < .01$). Univariate analyses indicated that the multivariate effect was attributable to a significant difference between integrated and segregated EMR children on Factor I (hostile, aggressive behavior.) Segregated children scored significantly higher on this factor than integrated children. No significant differences between the two EMR groups were found for factors II or III.

No significant multivariate effects were evident for the two remaining contrasts. However, there was a significant univariate effect on Factor I for the integrated and segregated EMR vs. low IQ non-EMR contrast ($F = 5.23$, $df = 1/51$, $p < .026$). Inspection of the group means on Factor I indicated that this significant finding was largely the result of the high mean of the segregated EMR group. Little difference existed in the mean scores between the integrated EMR and low IQ unlabeled children on Factor I.

Relevant means and standard deviations for the Factor scores appear in Table 4.

Insert Table 4 about here

Table 4

Means and Standard Deviations for Factor Scores

Group	Factor I	Factor II	Factor III
Segregated EMR			
$\bar{X}$	0.890	0.070	-0.468
SD	1.745	0.955	1.115
Integrated EMR			
$\bar{X}$	-0.218	-0.212	0.164
SD	0.572	1.262	1.190
Low IQ nonEMR			
$\bar{X}$	-0.323	0.085	0.089
SD	0.432	0.978	0.889
Average IQ			
$\bar{X}$	-0.166	0.056	0.157
SD	0.414	0.846	0.778

Discussion

The results of this investigation confirm those obtained previously (Gampel, et al.) which indicated that EMR children in segregated classes in a middle-class suburban school system exhibit higher incidences of hostile, aggressive behaviors than do integrated EMR children. An additional finding in the present study was that the latter group did not differ significantly from either low-IQ non-EMR or intellectually average children on any of the three factors. The present data were collected only when the children were working at their desks during semi-structured activities. Therefore, no statement can be made regarding the comparative behaviors of segregated and integrated EMR children during more informal academic activities or during free-play situations.

One explanation for these data derives from Guskin's (1963) argument that retarded children behave in such a manner as to fulfill their role concepts. That is, if EMR children are expected to exhibit "dumb" behaviors, they will. In a school system, children are defined as retarded only as long as they remain in the special class. Before the diagnosis and placement are made, the child is a slow learner, b ehavior problem, etc., but is not mentally retarded. Following this argument, when the child is removed from the special class he no longer can be considered mentally retarded, If others in the school do not consider the child to be retarded and to exhibit "retarded" behaviors, and he does not believe himself to be such, the child comes to behave more like children who are not retarded and less

like children who are. The data suggest that this occurred among the integrated EMR children. Three months after assignment to a regular class, the integrated EMR children were clearly more similar to average intellect children than segregated EMR children in the behaviors that were observed.

An alternative explanation for these findings is that EMR children in segregated classes do not have appropriate models to imitate while they are in class, whereas EMR children assigned to regular classes do, and hence are more likely to imitate them. Strichart (1972) reviewed the imitation learning literature among normal children and concluded that imitation occurs most often under conditions where a noncompetent observer (O) is asked to imitate competent model (M). Such a situation would exist when an EMR is re-integrated. When a child (who has been defined by the school as being mentally retarded) has spent an extended period of time under circumstances that label his lack of ability, suddenly finds himself thrust back into regular classes, it is not unreasonable to expect that he will view the other children as being more able. He will most likely imitate the behavior of his regular class peers, if only to avoid a return to the stigmatized placement.

Segregated EMR children, on the other hand, find themselves in a situation where they and their classmates were assigned to a special class because of academic inadequacy and for engaging in behaviors that were inappropriate to a regular classroom. The behaviors that are deviant and unacceptable in the regular class may become the modal behavior in the special class. The

availability of appropriate models in the special class may be minimal, as may be the amount of peer reinforcement forthcoming for engaging in appropriate behavior. Therefore, although it would be anticipated that less imitation would occur in a special class than in a regular class because the former is confined to children on approximately equal competence (relative to a regular class), this may not be so. The availability of models manifesting inappropriate behaviors, coupled with the incentives they provide for behaving in a manner that is familiar to the special class child, may be sufficient for him to continue to exhibit inappropriate behaviors.

Finally, two methodological issues must be considered. In the present investigation, the behaviors of EMR children in a single special class were compared with those of integrated EMRs who attended five regular classes. Clearly, a teacher's influence as to what constitutes acceptable behavior in her classroom could have influenced the data. Thus, greater variability would have been anticipated in the behaviors of integrated EMRs who were observed in five separate classes. Inspection of the standard deviation of the raw behavior categories which appear in Table 2 indicate that this was not the case. The SDs of the integrated children were very similar to those of the special class subjects.

A related issue concerns the generalizeability of classroom behaviors observed in a single special class. How representative is one special class of a population of special classes? The

data from the special class employed in this investigation were compared with that of three special classes used in another investigation that employed identical procedures (Gampel, et al., 1972) and no differences in the variability were observed.

In conclusion, one objective of re-integrating EMR children into regular classes is to provide them with an educational experience that is similar to that which the majority of children receive. The purpose for this is to "normalize" EMR children. The present data indicate that integrated class placement provides a milieu in which the classroom behaviors of EMR children are more similar to those of children who are not labeled as retarded than to those who are.

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Footnotes

[1] This research was supported by Grants OEG-0-8-080506-4597 (607) from the U. S. Office of Education, Bureau of the Handicapped and 5 RO1 MH 18553 from the National Institute for Mental Health, Dr. Milton Budoff, Principal Investigator. The authors express their gratitude to Mr. Charles Burack, Mr. James Underwood and Mr. Evans Tsoules for their cooperation and assistance in the investigation.

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